

Semper Fly Helicopters

14 CFR PART 141 FLIGHT SCHOOL



**AVIA 4643 - FLIGHT INSTRUCTOR
INSTRUMENT PILOT GROUND**

**ROTORCRAFT/HELICOPTER
CERTIFICATION COURSE
GROUND TRAINING MANUAL**

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SECTION 1 - GROUND TRAINING SYLLABUS

1.1 - Course Requirements and Objectives

Enrollment Prerequisites

The Semper Fly Helicopters Flight Instructor Instrument Pilot Rotorcraft / Helicopter Ground Training Course is designed to have the students concurrently enrolled in the associated Semper Fly Helicopters Flight Instructor Instrument Pilot Rotorcraft / Helicopter Flight Training Course. As such, students must meet the following criteria:

1. Minimum Age: 17
2. English Proficiency - Students must be proficient in reading, writing, and speaking English to comply with FAA regulations
3. Financial Readiness - Students must be able to provide proof of ability to finance the training program, either through personal funds, loans, or GI Bill benefits for eligible veterans
4. Interview and Assessment - Semper Fly Helicopters reserves the right to conduct an interview in which the motivation and fitness for flight training can be assessed
5. Required Documents
 - A. U.S. Citizens
 - i. Proof of U.S. Citizenship
 - ii. Valid, unexpired U.S. passport OR
 - iii. Original or government-issued birth certificate of the U.S., American Samoa, or Swains Island AND a government-issued picture identification OR
 - iv. Original certification of birth abroad with raised seal (Form FS-545 or Form DS-1350) AND a government-issued picture identification OR
 - v. Original certificate of U.S. citizenship with raised seal (Form N-560 or N-561) or a Certificate of Repatriation (Form N-581) AND government-issued picture ID OR
 - vi. Original U.S. Naturalization Certificate with raised seal (Form N-550 or N-570) AND a government-issued picture ID
 - vii. FAA Class I or Class II Medical
 - viii. FAA Airman's Certificate: Commercial Pilot Certificate (Rotorcraft)
 - ix. FAA Airman's Certificate: Certified Flight Instructor Pilot Certificate (Rotorcraft)
 - x. FAA Knowledge Test (if completed)
 - B. Foreign Nationals
 - i. Passport
 - ii. Visa
 - iii. FAA Class I or Class II Medical
 - iv. Complete TSA Training application

Additionally, all students must satisfy the requirements identified in Part 141; Appendix G, applicable to the certificate or rating sought by the learner. If the student is degree seeking, they must meet the enrollment criteria of the University of Oklahoma Aviation Department.

Ground Training Course Objective

The student will develop the knowledge specified by 14 CFR Part 141 Appendix G and the Practical Test Standards for a Flight Instructor Instrument Pilot Rotorcraft/Helicopter certificate. The student will be expected to utilize this knowledge to receive a passing score on the Certified Flight Instructor Instrument Pilot Knowledge Test.

Ground Training Course Completion Standards

The ground-training course will be completed when the student pilot demonstrates knowledge that meets or exceeds those standards as outlined in the Semper Fly Helicopters Standard Operating Procedures and Safety Policies Manual and the Practical Test Standards.

*(The ground curriculum contained in this training course outline may be substituted with previous training given that the student is credited no more than 50 percent of the aeronautical knowledge training requirements of this curriculum.)

Ground Training Curriculum

Ground school for the Flight Instructor Pilot student is accomplished by enrollment in the course and a minimum of 43.0 classroom hours. An outline for each lesson is provided in the following Ground Training Syllabus. The academic instructor will be responsible for student knowledge who obtained credit by exam or who have not taken these courses.

Ground Training Textbooks

The ground-training course is structured by the Helicopter Pilot Textbook, Aviation Instructor's Handbook, and the Federal Regulations FAR/AIM. Ground training lessons generally follow the sequence and content of these textbooks. Other required reference materials are listed in the Introduction Section of the Practical Test Standards.

Training Records

Semper Fly Helicopters will establish and maintain current and accurate records of the participation of each student enrolled in the aviation program. These records will include as a minimum the date the student was enrolled, a chronological log of the student's course attendance, the subjects, and flight operations covered in the student's training, and the names and grades of any tests taken by the student. Additionally, a record will be maintained on the date the student graduated, terminated training, or transferred to another school. Whenever a student graduates, terminates training, or transfers to another school, the student's record will be certified to that effect by the chief instructor. The school will retain each student record for at least 1 year from the date that the student either graduates from the course to which the record pertains, terminates enrollment in the course to which the record pertains, or transfers to another school. These records will be kept in accordance with 14 CFR 141.101. The school will make a copy of these records available to the student upon request.

1.2 - Flight Instructor Instrument Pilot Course
Minimum Time Summary

<u>TRAINING STAGE</u>	<u>DUAL</u>	<u>SOLO</u>	<u>X/C</u>	<u>ORAL</u>	<u>GROUND</u>
Ground Stage One					6.0
Ground Stage Two					21.0
Ground Stage Three					16.0
SUB-TOTAL					43.0

**TOTAL FLIGHT TIME FOR FLIGHT INSTRUCTOR INSTRUMENT
PILOT COURSE: 15.3 HOURS**

MINIMUM TOTAL SIMULATED INSTRUMENT FLIGHT TIME: 13.0

1.3 - Grading Rubric

After each lesson, the instructor will assign grades for each ground or flight activity using the following scale:

GRADE	STUDENT PERFORMANCE	DESCRIPTION
A	Exceeds Standards	The student meets the FAA Practical Test Standards and usually (50% of the time or more) exceeds those standards.
B	Meets Standards	The student meets the FAA Practical Test Standards.
C	Below Standards	The student does not meet the FAA Practical Test Standards.
F	Failure	Student non-participation or refusal to re-train
I	Incomplete	The allotted time was not sufficient for the student to perform the activity.
NG	Not Graded	The activity was not assigned to the student and will <u>not</u> be required to be completed in a separate training session.

NOTES

- With a grade of C, or F, the instructor must include amplifying comments on the grade form
- With a grade of C, F, or I, the student will be required to complete the activity to the FAA Practical Test Standards in a separate training session.

SECTION 2 - STAGE ONE GROUND TRAINING

OBJECTIVES:

The primary concentration during Ground Training is on the fundamentals of instruction including: the Learning Process, Elements of Effective Teaching, Student Evaluation and Testing, Course Development, Lesson Planning, Classroom Training Techniques, and Aeronautical Knowledge areas required for the Instrument Rotorcraft Helicopter certificate.

The ground training portion of the curriculum will follow the flow of the Aviation Instructors Handbook (FAA-H-8083-9A) to help ensure that all required material be covered.

Each student must read the syllabus content material prior to arriving for class. The student must be prepared to present and discuss the subject content during class.

REFERENCES:

1. The Semper Fly Helicopters Training Course Outline for the Flight Instructor Instrument Pilot Rotorcraft / Helicopter Certification Course
2. The Semper Fly Helicopters Standard Operating Procedures and Safety Policies Manual
3. The Semper Fly Helicopters Instrument Study Guide
4. Guimbal Cabri G2 Flight Manual
5. Guimbal Cabri G2 Flight Instructor Guide
6. Helicopter Pilot Textbook. Jeppesen Sanderson, Inc
7. Aeronautical Decision Making for Pilots
8. The FAR/AIM Manual
9. Flight Instructor Instrument Practical Test Standards for Airplane Rating and Helicopter Rating, FAA-S-8081-9E
10. Risk Management Handbook, FAA-H-8083-2
11. Aviation Instructor's Handbook, FAA-H-8083-9A

COMPLETION STANDARDS:

The student will display a functional knowledge required at the Certified Flight Instructor level and be able to teach pilots required topics of aeronautical knowledge and flight skills.

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LESSON	HOURS	PAGE
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<u>2.2 - Lesson 2: Human Behavior</u>	0.5	2-4
<u>2.3 - Lesson 3: The Learning Process</u>	0.5	2-5
<u>2.4 - Lesson 4: Effective Communication</u>	0.5	2-6
<u>2.5 - Lesson 5: The Teaching Process</u>	0.5	2-7
<u>2.6 - Lesson 6: Assessment</u>	0.5	2-8
<u>2.7 - Lesson 7: Planning Instructional Activity</u>	0.5	2-9
<u>2.8 - Lesson 8: Instructor Responsibilities & Professionalism</u>	0.5	2-10
<u>2.9 - Lesson 9: Techniques of Flight Instruction</u>	0.5	2-11
<u>2.10 - Lesson 10: Risk Management</u>	0.5	2-12
<u>2.11 - Lesson 11: Stage One Review & Evaluation</u>	1.0	2-13
GROUND STAGE ONE - TOTAL HOURS	6.0	

2.1 - LESSON 1: INTRODUCTION

(Ground: 0.5 Hours)

OBJECTIVES:

To explain the requirements to become a Certified Flight Instructor Instrument (CFII), maintaining the CFII rating, and discuss the training program.

CONTENTS:

1. Training for the CFII rating
 2. Maintaining the CFII rating
 3. Review of the Training Course Outline
- Review of Semper Fly Helicopters Standard Operating Procedures and Safety Policies Manual and signing of agreement form

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an instructional understanding of the aviation industry, the pilot training process, and the requirements necessary to become a safe and responsible certificated Instrument Flight Instructor.

2.2 - LESSON 2: HUMAN BEHAVIOR

(Ground: 0.5 Hours)

OBJECTIVES:

To introduce the student to human behavior and how it affects the learning process.

CONTENTS:

1. Definitions of Human Behavior
2. Human Needs and Motivation
3. Human Nature and Motivation
4. Human Factors That Inhibit Learning
5. Student Emotional Reactions
6. Teaching the Adult Student

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an understanding of Human Behavior and how it affects the learning process.

2.3 - LESSON 3: THE LEARNING PROCESS

(Ground: 0.5 Hours)

OBJECTIVES:

To introduce the student to the process by which people learn.

CONTENTS:

1. Introduction
2. Learning Theory
3. Perceptions
4. Insight
5. Acquiring Knowledge
6. Thorndike and the Laws of Learning
7. Domains of Learning
8. Characteristics of Learning
9. Learning Styles
10. Acquiring Skill Knowledge
11. Types of Practice
12. Evaluation Versus Critique
13. Putting it All Together
14. Scenario-Based Training
15. Errors
16. Motivation
17. Maintaining Motivation
18. Memory
19. Retention of Learning
20. Transfer of Learning

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an understanding of the process by which people learn and its importance in helping to form judgment and problem solving skills.

2.4 - LESSON 4: EFFECTIVE COMMUNICATION

(Ground: 0.5 Hours)

OBJECTIVES:

To introduce the student to the essential elements of effective communication including the barriers to communication and development of communication skills.

CONTENTS:

1. Basic Elements of Communication
2. Barriers to Effective Communication
3. Developing Communication Skills

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an understanding of the importance of developing effective communication. The student will also be able to discuss the basic elements of communicating and barriers that can present challenges during the learning process.

2.5 - LESSON 5: THE TEACHING PROCESS

(Ground: 0.5 Hours)

OBJECTIVES:

To introduce the student to specific recommendations on how to apply the theoretical information covered thus far in human behavior, how people learn and effective communication.

CONTENTS:

1. What is Teaching?
2. Instructors Code of Conduct
3. Course of Training
4. Preparation of a Lesson
5. Presentation of a Lesson
6. Organization of Material
7. Training Delivery Methods
8. Problem-Based Learning
9. Electronic Learning (E-Learning)
10. Cooperative or Group Learning Method
11. Demonstration-Performance Method
12. Drill & Practice Method
13. Application of the Lesson
14. Assessment of the Lesson
15. Instructional Aids and Training Technologies
16. Test Preparation Material

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an ability and understanding on how to apply what has been learned about human behavior, how people learn and effective communication techniques in support of the teaching process.

2.6 - LESSON 6: ASSESSMENT

(Ground: 0.5 Hours)

OBJECTIVES:

To introduce the student to the instructor's role in assessing levels of learning, methods of assessment available and how to construct and conduct an effective assessment.

CONTENTS:

1. Assessment Terminology
2. Purpose of Assessment
3. General Characteristics of Effective Assessment
4. Traditional Assessment
5. Authentic Assessment
6. Choosing an Effective Assessment Method
7. Critiques and Oral Assessments

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an understanding of how to effectively construct and conduct an assessment of a student's performance and progress.

2.7 - LESSON 7: PLANNING INSTRUCTIONAL ACTIVITY

(Ground: 0.5 Hours)

OBJECTIVES:

To introduce the student to the planning required by the professional aviation instructor as it relates to four key topics; course of training, blocks of learning, training syllabus, and lesson plans as well as how to integrate Scenario Based Training (SBT), Aeronautical Decision Making (ADM) and risk management into the aviation training lesson.

CONTENTS:

1. Course of Training
2. Blocks of Learning
3. Training Syllabus
4. Lesson Plans
5. Scenario-Based Training (SBT)
6. Single-Pilot Resource Management

COMPLETION STANDARDS:

This lesson will be successfully completed when the student has presented three lessons using the tools, resources and formats covered in this and previous lessons in a manner which is well organized and effectively communicated.

2.8 - LESSON 8: INSTRUCTOR RESPONSIBILITIES & PROFESSIONALISM

(Ground: 0.5 Hours)

OBJECTIVES:

To introduce the student to the responsibilities of an instructor during the training process, their role as an advocate for safety and ways in which aviation instructors can enhance their professional image.

CONTENTS:

1. Aviation Instructor Responsibilities
2. Flight Instructor Responsibilities
3. Aviator's Model Code of Conduct
4. Safety Practices & Accident Prevention
5. Professionalism
6. Evaluation of Student Ability
7. Aviation Instructors & Exams
8. Professional Development

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an understanding of the responsibilities of an aviation instructor as they pertain to learning, safety and professionalism.

2.9 - LESSON 9: TECHNIQUES OF FLIGHT INSTRUCTION

(Ground: 0.5 Hours)

OBJECTIVES:

To introduce the student to strategies that can be used to enhance their instruction and concepts of system safety.

CONTENTS:

1. Flight Instructor Qualifications
2. Practical Flight Instructor Strategies
3. Obstacles to Learning During Flight Instruction
4. Demonstration-Performance Training Delivery Method
5. Positive Exchange of Controls
6. Sterile Cockpit Rule
7. Use of Distractions
8. Integrated Flight Instruction
9. Assessment of Piloting Ability

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an understanding of how to apply the concepts and contents introduced in this lesson in relation to enhancing the quality of instruction and system safety.

2.10 - LESSON 10: RISK MANAGEMENT

(Ground: 0.5 Hours)

OBJECTIVES:

To introduce the student to the concept of preemptive actions that contribute to safety rather than reactive through the process of risk management.

CONTENTS:

1. Defining Risk Management
2. Level of Risk
3. Mitigating Risk
4. Three-P Model for Pilots
5. Hazard List for Aviation Technicians
6. Pilot Self-Assessment
7. Situational Awareness
8. Single-Pilot Resource Management (SRM)
9. Teaching Decision Making Skills
10. Assessing SRM Skills
11. Aeronautical Decision Making (ADM)

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an understanding of the process of risk management including specific techniques to be used in assessment and mitigation.

2.11 - LESSON 11: STAGE ONE REVIEW & EVALUATION

(Ground: 1.0 Hours)

OBJECTIVES:

This lesson provides the flight student the opportunity to review all material covered in Stage One and to prepare for the course final examination.

CONTENTS:

Oral Examination of the Flight Student by the Stage Check Instructor over the contents covered in Stage One Ground Training.

COMPLETION STANDARDS:

The flight student will successfully complete this lesson when, in the opinion of the instructor, he or she possesses an instructional knowledge of at least 90% of the material covered during Stage One.

SECTION 3 - STAGE TWO GROUND TRAINING

OBJECTIVES:

The primary objective during this stage of Ground Training is to focus on Aeronautical Knowledge areas to include Regulations, Logbook and Endorsements, Flight Instruction, Helicopter Systems, The Flight Environment, Ground Operations, Flight Maneuvers, Emergency Procedures, Meteorology, Navigation, Aviation Physiology, and Aeronautical Decision Making (ADM).

The ground training portion of the curriculum will follow the flow of the Aviation Instructors Handbook (FAA-H-8083-9A) to help ensure that all required material be covered.

Each student must read the syllabus content material prior to arriving for class. The student must be prepared to present and discuss the subject content during class.

REFERENCES:

1. The Semper Fly Helicopters Training Course Outline for the Flight Instructor Pilot Certification Course
2. The Semper Fly Helicopters Standard Operating Procedures and Safety Policies Manual
3. The Semper Fly Helicopters Private / Commercial Study Guide
4. Guimbal Cabri G2 Flight Manual
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6. Helicopter Pilot Textbook. Jeppesen Sanderson, Inc
7. Aeronautical Decision Making for Private Pilots
8. The FAR/AIM Manual
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10. Risk Management Handbook, FAA-H-8083-2
11. Aviation Instructor's Handbook, FAA-H-8083-9A

COMPLETION STANDARDS:

The student will display a functional knowledge required at the Certified Flight Instructor level and be able to teach pilots required topics of aeronautical knowledge and flight skills

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<u>3.3 - Lesson 3: Human Factors - Part 2</u>	2.0	3-5
<u>3.4 - Lesson 4: Safe and Efficient Operations Under IFR - Part 1</u>	1.0	3-6
<u>3.5 - Lesson 5: Safe and Efficient Operations Under IFR - Part 2</u>	1.0	3-7
<u>3.6 - Lesson 6: IFR Navigation and Approaches - Part 1</u>	4.0	3-8
<u>3.7 - Lesson 7: IFR Navigation and Approaches - Part 2</u>	4.0	3-9
<u>3.8 - Lesson 8: IFR En-route</u>	4.0	3-10
<u>3.9 - Lesson 9: Stage Two Review & Evaluation</u>	2.0	3-11
GROUND STAGE TWO - TOTAL HOURS	21.0	

3.1 - LESSON 1: FLIGHT INSTRUMENTS

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the flight instructor candidate possesses an instructional understanding of the function, operation, and potential errors associated with instruments used for IFR flight.

CONTENTS:

1. Pitot/Static Systems
2. Pitot/Static Instruments
3. Dynamic Pressure Instruments
4. Magnetism
5. Gyroscopic Systems
6. Gyroscopic Instruments
7. Flight Support Systems
8. Analog Pictorial Displays
9. Flight Management Systems
10. Primary Flight Display
11. Advanced Technology Systems (ADS-B)
12. Safety Systems
13. Required Navigation Instrument System Inspection

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an instructional knowledge of the pitot/static system as well as other instrumentation, and required inspections covered in this lesson.

3.2 - LESSON 2: HUMAN FACTORS - PART 1

(Ground: 2.0 Hours)

OBJECTIVES:

To determine that the student possesses an instructional understanding of human factors that can affect perception and psychological performance.

CONTENTS:

1. Sensory Systems Orientation
2. Illusions Leading to Spatial Disorientation
3. Coping with Spatial Disorientation
4. Optical Illusions
5. Physiological and Psychological Factors
6. Medical Factors
7. Hazard Identification

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an instructional understanding of the human factors covered in this lesson and their effect on a pilot's perception and psychological performance.

3.3 - LESSON 3: HUMAN FACTORS - PART 2

(Ground: 2.0 Hours)

OBJECTIVES:

To determine that the student possesses an instructional understanding of Crew Resource Management (CRM), Aeronautical Decision Making (ADM) and Judgment, and Controlled Flight Into Terrain (CFIT).

CONTENTS:

8. Crew Resource Management (CRM) and Single-Pilot Resource Management (SRM)
9. Situational Awareness
10. Flight Deck Resource Management
11. Task Management
12. Aeronautical Decision Making and Judgment
13. Models for Practicing Aeronautical Decision Making (ADM)
14. Controlled Flight Into Terrain (CFIT)
15. Risk Management
16. Automation Management

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an instructional understanding of Crew Resource Management (CRM), Aeronautical Decision Making (ADM) and Judgment, and Controlled Flight Into Terrain (CFIT).

3.4 - LESSON 4: SAFE AND EFFICIENT OPERATIONS UNDER IFR - PART 1

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student possesses an instructional understanding of the National Airspace System, System Safety, System Capacity, and how the Airspace system's components work together.

CONTENTS:

1. National Airspace System Plans
2. System Safety
3. System Capacity
4. Managing Safety & Capacity

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an instructional knowledge and understanding of the National Airspace System, System Safety, System Capacity, and the associated components which work together to help ensure safety.

3.5 - LESSON 5: SAFE AND EFFICIENT OPERATIONS UNDER IFR - PART 2

(Ground: 1.0 Hours)

OBJECTIVES:

To determine that the student possesses an instructional understanding of the safety mechanisms of the IFR system, specifically concerning the surface operation and departure phases of flight.

CONTENTS:

5. Safety in the Departure Environment
 - A. Surface Movement Safety
 - B. Runway Incursions
6. Take-off Minimums

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an instructional understanding of the safety mechanisms of the IFR system, specifically concerning the surface operation and departure phases of flight.

3.6 - LESSON 6: IFR NAVIGATION AND APPROACHES - PART 1

(Ground: 4.0 Hours)

OBJECTIVES:

To determine that the student possesses an instructional understanding of the various navigation systems used in IFR flight.

CONTENTS:

1. Basic Radio Principles
2. Traditional Navigation Systems
 - A. NDB
 - B. VOR
 - C. DME
 - D. RNAV
3. Global Positioning System (GPS)
 - A. Wide Area Augmentation (WAAS)
 - B. Local Area Augmentation (LAAS)
4. Instrument Approach Systems
 - A. Instrument Landing System (ILS)
 - B. Simplified Directional Facility (SDF)
 - C. Localizer Type Directional Aid (LDA)
 - D. Microwave Landing System (MLS)
5. Flight Management Systems

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination; the student demonstrates an instructional understanding of the various navigation systems used in IFR flight.

3.7 - LESSON 7: IFR NAVIGATION AND APPROACHES - PART 2

(Ground: 4.0 Hours)

OBJECTIVES:

To determine that the student possesses an instructional understanding of the workings and components which make up the approach portion/phase of flight.

CONTENTS:

6. Approach Planning
 - A. Regulatory Requirements
 - B. Performance Considerations
7. Operational Considerations (Approach Procedure Charts)
8. Air Route Traffic Control Center
9. Instrument Approach Procedure Briefing
10. Instrument Approach Procedure Segments
11. Types of Approaches
 - A. Visual & Contact Approaches
 - B. RNAV Approaches
 - C. ILS Approaches
 - D. Microwave Landing System
 - E. VOR Approaches
 - F. NDB Approaches
 - G. Radar Approaches
 - H. Localizer Approaches, including LDA
 - I. Simplified Directional Facility

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student exhibits an instructional understanding of the workings and components of the approach portion/phase of IFR flight.

3.8 - LESSON 8: IFR EN-ROUTE

(Ground: 4.0 Hours)

OBJECTIVES:

To determine that the student possesses an instructional understanding of the various components of en-route navigation, procedures, and operational considerations to be taken.

CONTENTS:

1. En-route Navigation & Charts
2. IFR En-route Altitudes
3. Reporting Procedures
4. Communication Failure
5. Climbing & Descending En-route
6. Holding Procedures
7. Fuel State Awareness
8. Diversion Procedures
9. En-route RNAV Procedures
10. RNAV En-route Minimum Altitudes
11. Minimum IFR Altitudes
12. Waypoints
13. National Route Program
14. Advanced Area Navigation Routes
15. Required Navigation Performance

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student demonstrates an instructional understanding of the various components of en-route navigation, procedures, and operational considerations to be taken.

3.9 - LESSON 9: STAGE TWO REVIEW & EVALUATION

(Ground: 2.0 Hours)

OBJECTIVES:

This lesson provides the student the opportunity to review all material covered in Stage Two and to prepare for the course final examination.

CONTENTS:

Oral examination of the student by Stage Check Instructor over the contents of Stage Two.

COMPLETION STANDARDS:

The student will successfully complete this lesson when, by oral or written examination, he or she displays a functional knowledge of at least 90% of the material covered during Stage Two.

SECTION 4 - STAGE THREE GROUND TRAINING

OBJECTIVES:

The primary concentration during Stage Three is on the Air Traffic Control System and Procedures, Federal Regulations for IFR Flight, Helicopter IFR Operations, Aviation Weather, and Recognition of Critical Weather Conditions.

Each student must read the syllabus content material prior to arriving for class. The student must be prepared to discuss the subject content during class.

REFERENCES:

1. The Semper Fly Helicopters Training Course Outline for the Instrument Pilot Certification Course
2. The Semper Fly Helicopters Standard Operating Procedures and Safety Policies Manual
3. The Semper Fly Helicopters Private / Commercial Study Guide
4. Guimbal Cabri G2 Flight Manual
5. Guimbal Cabri G2 Flight Instructor Guide
6. Instrument Flying Handbook, FAA-H-8083-15B.
7. Instrument Procedures Handbook, FAA-H-8261-1A
8. Aviation Weather, AC 00-6
9. Aviation Weather Services, AC 00-45
10. Helicopter Pilot Textbook. Jeppesen Sanderson, Inc.
11. Flight Instructor Instrument Practical Test Standards for Airplane Rating and Helicopter Rating, FAA-S-8081-9E
12. FAR/AIM

COMPLETION STANDARDS:

The student will display an instructional knowledge and understanding of the Air Traffic Control System and Procedures, Federal Regulations for IFR Flight, Helicopter IFR Operations, Aviation Weather, and Recognition of Critical Weather Conditions. Stage Three is the final stage of the ground portion of this Syllabus and will require the student to pass the FAA Rotorcraft/Helicopter Flight Instructor Instrument written exam upon completion.

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LESSON	HOURS	PAGE
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<u>4.3 - Lesson 3: Helicopter IFR Operations</u>	2.0	4-5
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<u>4.6 - Lesson 6: Final Test & Evaluation</u>	2.0	4-8
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GROUND STAGE THREE - TOTAL HOURS	16.0	

4.1 - LESSON 1: AIR TRAFFIC CONTROL SYSTEMS & PROCEDURES

(Ground: 2.0 Hours)

OBJECTIVES:

To determine that the student possesses an instructional understanding of the various components that comprise the air traffic control system and procedures for operations under IFR.

CONTENTS:

1. Communication Equipment
2. Communication Procedures
3. Loss of Communication Procedures
4. Communication Facilities
5. ATC In-Flight Weather Avoidance Assistance
6. Approach Control Facility
7. Approach Control Advances
8. Control Sequence

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student demonstrates an instructional understanding of the various components that comprise the air traffic control system and procedures for operations under IFR.

4.2 - LESSON 2: FEDERAL REGULATIONS FOR IFR FLIGHT

(Ground: 2.0 Hours)

OBJECTIVES:

To determine that the student possesses an instructional understanding of the Federal Regulations pertaining to IFR flight and operations, along with their listing location in the Federal Aviation Regulations (FAR/AIM).

CONTENTS:

The student will review all applicable portions of Parts 61, 91, 97, and NTSB 830 with emphasis to be placed on the following:

1. Pilot Logbooks (61.51)
2. Recent flight experience: Pilot in command (61.57)
3. Fuel Requirements for Flight in IFR Conditions (91.167)
4. IFR Flight Plan & Information Required (91.169)
5. VOR Equipment Check for IFR Operations (91.171)
6. ATC Clearance & Flight Plan Required (91.173)
7. Take-off and Landing Under IFR (91.175)
8. Minimum Altitudes for IFR Operations (91.177)
9. IFR Cruising Altitudes & Flight Levels (91.179)
10. Operations Within Airspace Designated as Reduced Vertical Separation (91.180)
11. Course to be Flown (91.181)
12. IFR Communications (91.183)
13. IFR Operations: Two-way Radio Communications Failure (91.185)
14. IFR Operations: Malfunction Reports (91.187)
15. Symbols & Terms Used in Procedures (97.3)
16. Bearings, Courses, Tracks, Headings, Radials, Miles (97.5)
17. NTSB 830

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student demonstrates an instructional understanding of the Federal Regulations pertaining to IFR flight and operations, along with their listing location in the Federal Aviation Regulations (FAR/AIM).

4.3 - LESSON 3: HELICOPTER IFR OPERATIONS

(Ground: 2.0 Hours)

OBJECTIVES:

To determine that the student possesses an instructional understanding of the procedures and regulations specific to helicopter IFR operations.

CONTENTS:

1. Helicopter Flight Control Systems (AIM 10-1-1)
2. Helicopter Instrument Approaches (AIM 10-1-2)
3. Helicopter Approach Procedures to VFR Helicopters (AIM 10-1-3)

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an instructional knowledge of the contents of Chapter 10 of the Aeronautical Information Manual (AIM), specifically concerning the portions covering helicopter IFR operations.

4.4 - LESSON 4: AVIATION WEATHER

(Ground: 4.0 Hours)

OBJECTIVES:

To determine that the student possesses an instructional understanding of AC 00-6, which covers weather and its potential effect on the safety of flight.

exhibits instructional knowledge of the elements contained within this lesson.

CONTENTS:

1. The Earth's Atmosphere
2. Temperature
3. Atmospheric Pressure and Altimetry
4. Wind
5. Moisture, Cloud Formation, & Precipitation
6. Stable & Unstable Air
7. Clouds
8. Air Masses & Fronts
9. Turbulence
10. Icing
11. Thunderstorms
12. Common IFR Producers

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student displays an instructional knowledge of weather and its potential effects on the safety of flight.

4.5 - LESSON 5: RECOGNITION OF CRITICAL WEATHER CONDITIONS

(Ground: 4.0 Hours)

OBJECTIVES:

To determine that the student possesses an instructional knowledge of AC 00-45, and its use as a reference guide in translating various textual and graphical reports, forecasts, and charts.

CONTENTS:

1. Aviation Weather Service Program
2. Aviation Weather Product Classification and Policy
3. Observed Text Products
4. Radar & Satellite Imagery
5. Graphical Observations & Derived Products
6. Products for Aviation Hazards
7. Forecast Text Products
8. Forecast Charts
9. Wind Shear Avoidance
10. Supplementary Products

COMPLETION STANDARDS:

This lesson will be successfully completed when, by oral or written examination, the student demonstrates an instructional understanding of AC 00-45, and its use as a reference guide in translating various textual and graphical reports, forecasts, and charts.

4.6 - LESSON 6: FINAL TEST & EVALUATION

(Ground: 2.0 Hours)

OBJECTIVES:

To determine the student's level of knowledge on the subject matter covered during the entire ground curriculum.

REFERENCES:

1. Helicopter Flying Handbook
2. The FAR/AIM Manual
3. Aviation Instructor's Handbook
4. Risk Management Handbook
5. Pilot's Encyclopedia of Aeronautical Knowledge
6. Aviation Weather For Pilots
7. Aviation Weather Services

CONTENTS:

This examination will review Stage One, Two, and Three material. The examination shall, as a minimum, consist of (but is not limited to) at least 25 FAA computer knowledge examination type multiple choice questions.

COMPLETION STANDARDS:

Grading is based on the traditional scale:

- A = 90% to 100%
- B = 80% to 89%
- C = 70% to 79%
- D = 60% to 69%
- F = below 60%

Students who do not achieve a satisfactory score (80 +) must be scheduled for additional instruction in the area(s) of deficiency identified by the examination or must retake the course.

4.7 - LESSON 7: FAA COMPUTER KNOWLEDGE EXAMINATION

OBJECTIVES:

This lesson provides the student an opportunity to participate in the FAA Helicopter/Rotorcraft Flight Instructor Instrument Pilot written knowledge examination.

CONTENTS:

This examination will cover all topics found within the applicable Practical Test Standards and FAR/AIM sections. There are 50 randomly selected questions covering all topics addressed within the Flight Instructor Instrument Pilot Ground Course.

COMPLETION STANDARDS:

The student completes the course when he or she passes the FAA Computer Knowledge Test with a minimum score of 70% corrected to 100%. Students who do not achieve this score must be scheduled for additional instruction and re-examination, or be re-enrolled in the course.

ELIGIBILITY REQUIREMENTS:

Applicants do NOT require either the instructor of the ground course or a flight instructor endorse their logbook to certify that the student is competent to take the test.

KNOWLEDGE AREAS ON THE TESTS:

The tests are comprehensive, as they must test an applicant's knowledge in many subject areas. All test questions are the objective, multiple choice type, with three choices of answers; each question can be answered by the selection of a single response. Each test question is independent of other questions, that is, a correct response to one does not depend upon, or influence the correct response to another. The maximum time allowed for taking the Flight Instructor Instrument Pilot knowledge examination is 2.5 hours.

When taking a test, keep the following points in mind:

1. Answer each question in accordance with the latest regulations and procedures.
2. Read each question carefully before looking at the possible answers. You should clearly understand the problem before attempting to solve it.
3. After formulating an answer, determine which choice most nearly corresponds with the answer. The answer chosen should completely resolve the problem.
4. From the answers given, it may appear that there is more than one possible answer. However, there is only one answer that is correct and complete. The other answers are incomplete, erroneous, or represent common misconceptions.
5. If a certain question is difficult for you, it is best to mark it for RECALL and proceed to the next question. After you answer the less difficult questions, return to those, which you marked for recall and answer them. The recall marking procedure will be explained to you prior to starting the test. Although the computer should alert you to unanswered questions, make sure every question has an answer recorded. This procedure will enable you to use the available time to maximum advantage.
6. When solving a calculation problem, select the answer nearest your solution. The problem has been checked with various types of calculators; therefore, if you have solved it correctly, your answer will be closer to the correct answer than any of the other choices.

REMEMBER:

You always have an opportunity to take a sample test before the actual test begins.

ARRIVING FOR THE TEST:

When you arrive for the test, you should have a flight computer, a pocket calculator, a plotter, and a **PENCIL (NO PENS PLEASE)**. If you plan to use an electronic flight computer, the test monitor must ask you to remove the batteries to ensure that no information is in memory. **DO NOT LOSE THE AIRMAN TEST REPORT**, as you will need to present it to the examiner prior to taking the practical test. Loss of this report means that you will have to request a duplicate copy from the FAA in Oklahoma City.

CHEATING OR OTHER UNAUTHORIZED CONDUCT:

When entering the test area, you are permitted to take only scratch paper furnished by the test administrator and an authorized aviation computer, plotter, etc., approved for use in accordance with FAA Order 8080.6C, Conduct of Airmen Knowledge Tests via the Computer Medium, and AC 60-11C, Aids Authorized for Use by Airman Written Test Applicants. The FAA has directed testing centers to stop a test any time a test administrator suspects a cheating incident has occurred. An FAA investigation will then follow. If the investigation determines that cheating or other unauthorized conduct has occurred, any airman certificate that you hold may be revoked, and you may not be allowed to take a retest for 1 year.

RE-TESTING PROCEDURES:

If the score on the airman test report is 70 or above, in most cases the report is valid for 24 calendar months. You may elect to retake the test in anticipation of a better score. Prior to retaking the test, you must give your current airman test report to the Test Monitor. Remember, the score of the latest test you take will become the official test score.